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ACE-EIA Paper 2/2014
For advice on 23 June 2014

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report
Tai Shue Wan Development at Ocean Park

PURPOSE

This paper summarizes the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the proposed Tai Shue Wan Development at Ocean Park (hereinafter known as “the Project”) submitted under Section 6(2) of the Environmental Impact Assessment Ordinance (the EIAO) (Application No. EIA-221/2014). The Ocean Park Corporation (OPC) (the Applicant) and their consultants will present the EIA report at the meeting of the EIA Subcommittee.

ADVICE SOUGHT

2. Members’ views are sought on the findings and recommendations of the EIA report. The Director of Environmental Protection (DEP) will take into account comments from the public and the Advisory Council on the Environment (ACE) in deciding whether or not to approve the EIA report under Section 8(3) of the EIAO.

BACKGROUND

3. The existing Tai Shue Wan theme park of Ocean Park was constructed in early 1990 and had been in operation till January 2011. Since then, the facilities

within this area, including Middle Kingdom, Aviary, Bird Paradise Pond and Flamingo Pond etc. had been closed and were not used by visitors to Ocean Park. The Applicant proposes to construct and operate a new Water Park at the Tai Shue Wan area. It is expected to be opened in the middle of 2017.

4. The Applicant has submitted the EIA report for the Project for approval. DEP, in conjunction with relevant authorities, considers that the EIA report meets the requirements of the EIA Study Brief and the Technical Memorandum on EIA Process (TM), for the purpose of exhibiting the report for public inspection, under Section 7(4) of the EIAO.

NEED FOR THE PROJECT

5. The Applicant advised that the Project is needed to accommodate increasing number of visitors and to enrich the overall tourism appeal of Hong Kong by offering product diversity and additional capacity in one of our major tourism attractions. The Project would also enhance the status of Hong Kong as a premier destination for family visitors in the region, and serve to re-connect the people of Hong Kong with their fond memories of Ocean Park's original Water World in the past.

ENVIRONMENTAL BENEFITS

6. The Project is primarily situated in a developed area with various defunct structures. Upon completion, the Project would improve the landscape and visual appearance and environmental settings of the area by the implementation of various greening features and landscape elements, including the provision of new aesthetically-pleasing structures and landscape planting at the roofs and platform structures of the Project.

7. The Applicant also advised that the Project would offer opportunities to promote the use of environment friendly designs, including:

- (i) a rainwater harvesting system for recycling storm water for irrigation or cleaning purposes;

- (ii) renewable energy systems and energy efficient device, such as solar landscape lighting, heat exchangers for retrieving waste heat and low energy consumption signage etc.; and
- (iii) electric vehicles for guest shuttle service and staff transportation subject to available technology.

DESCRIPTION OF THE PROJECT

8. The Project is located to the south-west of Brick Hill (Nam Long Shan), facing Aberdeen Channel. The Project site comprises predominately developed land of the existing Tai Shue Wan theme park and the peripheral woodland and shrubland on hillsides. The Project site is approximately 6.63 ha in size. **Figure 1** shows the location and general layout of the Project.

9. The Project consists of indoor and outdoor zones with a total capacity to accommodate about 7 000 visitors. The staggered indoor and outdoor platforms contain a range of facilities and attractions, such as wave pools, water slides, food and beverage outlets, retail shops and the associated infrastructure. **Figures 2 and 3** illustrate the schematic landscape plan as well as the artist's impression of the Project respectively.

10. According to item O.8, Schedule 2, Part I of the EIAO, *a theme park or amusement park with a site area of more than 20 ha in size* is a Designated Project (DP). As such, the existing Ocean Park is an exempted DP because it had been in operation before the EIAO came into effect. Since the Project involves physical addition or alteration which would likely result in adverse environmental impact if no mitigation measures are put in place, the Project constitutes a material change to the exempted DP and therefore requires an environmental permit.

CONSIDERATION OF ALTERNATIVE OPTIONS

11. The EIA report has considered various options for the development of the Project, including alternative design schemes, construction methods and sequence of works, in order to avoid and minimize environmental impacts. The environmental benefits and dis-benefits of the options have been evaluated. The recommended option has taken into account environmental considerations, site

constraints and comments received from members of the public on the Project Profile during the public inspection period in May 2013. Some of the key approaches that have been adopted by the applicant to avoid and minimize the environmental impacts of the Project are summarized below:

Avoidance of Impacts

- (i) To reduce the footprint of the Project, the Applicant has slightly increased the building height to 3 storeys. This means the Applicant needs to separately apply for minor relaxation of building height restriction under the Town Planning Ordinance. In return, the reduced Project footprint would reduce the scale of vegetation to be cleared, including the number of trees to be felled, in the area.
- (ii) To preserve and enhance the existing tall shrubland area at the southern part of the Project site and to allow re-provisioning of the flamingo pond, the Applicant has shifted the development slightly to the north.
- (iii) To avoid marine ecological and water quality impacts, the Applicant has committed not to carry out any reclamation, dredging, construction of seawall or any other marine works in the Project. Moreover, the spent cooling water from the Project will be re-used for toilet flushing purpose. There will be no discharge of wastewater to the storm drains from the cooling system.

Minimization of Impacts

- (i) To further reduce the footprint of the Project and the extent of vegetation clearance including the number of trees to be felled, the angles for stabilised slope in soil and rock have been maximized to 55 and 85 degrees respectively.
- (ii) To reduce the extent of the foundation works for the supporting structures for water slides and rides platforms, which would reduce the overall construction impacts in dust, noise, waste management, etc., a design and construction method which conforms to the existing topography of the site has been adopted.

- (iii) To minimize the visual impact and incompatibility with the surrounding environment, a “terrace” design concept is adopted.

SPECIFIC ENVIROMNETAL ASPECTS TO HIGHLIGHT

Ecological Impact

12. No ardeids breeding activities or active ardeids nests were identified in the ecological field survey. The survey also revealed that the counts of ardeids were decreasing in the Project site during the survey period and there were other roosting locations for the ardeids such as the areas in the waterfront of Ap Lei Chau Estate and Sham Wan.

13. No fish was recorded in the two streams in the Project site and all aquatic species found in the streams and ponds were common and widespread in Hong Kong. The Eastern stream will not be affected by the Project whereas a section of approximately 75m long at the upper course of the Northern stream will be removed. The ecological value of the Northern stream is considered low because it is only a seasonal and very low flow stream with bare rock bed.

14. The Applicant will provide 1.62 ha woodland area to compensate the 1.53 ha loss in woodland habitat due to the Project. The Applicant will also re-provide a flamingo pond at the southern end of the Project site with plantation of native tree species and landscape setting similar to that used by ardeids in the previous flamingo pond and bird paradise pond.

15. To ensure that the trees planted are well established at the woodland compensation areas, the Applicant will also carry out a 3-year monitoring programme at that location. Also, one year monitoring for ardeids roosting activities at the new flamingo pond will also be carried out to ensure that the enhancement area is well established.

Landscape and Visual Impacts

16. There is no Champion Tree or Registered Old and Valuable Tree identified within the project site. During construction, the Project will affect about 1 749 trees which are mostly of common species and were originally planted by the Applicant mainly for amenity purposes. Of these, 65 trees will be retained,

1 tree will be transplanted, 70 dead trees will be removed and 1 613 trees will be felled ^[1]. The Applicant will re-plant about 500 heavy standard trees and 18 093 whip trees within the project site and Ocean Park's boundary. Altogether, the felled trees will be compensated with a ratio of around 1:1.43 ^[2] in terms of quantity of trees.

17. During operation of the Project, landscape and visual mitigation measures including extensive tree and amenity planting at the roofs, platforms and hillsides, and lighting control measures etc. will be implemented. With the above mitigation measures in place, the landscape and visual impacts of the Project are considered acceptable and will be beneficial in the long term.

Noise Impact

18. During the operational phase, the cumulative fixed plant noise and open-air entertainment noise impacts are predicted. With practicable noise mitigation measures and control of maximum allowable sound power levels of the noise sources, adverse noise impact is not anticipated. The EIA has also predicted that the contribution of road traffic noise impacts induced by operation of the Project is only around 0.1-0.2 dB(A).

19. For construction noise, with the implementation of quiet powered mechanical equipment (PME) and movable noise barriers, the resulting noise levels at Victoria Shanghai Academy and Hong Kong Juvenile Care Centre would meet the noise criteria of 70 dB(A) and 65 dB(A) during daytime and examination period respectively.

Air Quality Impact

20. For the operational phase, the EIA has concluded that the Project would only have minor contribution to the predicted air quality impacts at the Air Sensitive Receivers (ASRs) due to the induced road traffic generated from the visitors. The EIA has predicted that the cumulative Respirable Suspended Particulates (RSP), Fine Suspended Particulates (PM 2.5) and Nitrogen Dioxide (NO₂) concentrations for all the identified ASRs would comply with the new Air Quality Objectives.

¹ Included 84 numbers of *Leucaena leucocephala* which is a self-seeded invasive undesirable species.

² Counting 10 whip trees at 0.01m DBH (Diameter at Breast Height) equivalent to one heavy standard tree at 0.1m DBH in terms of tree numbers is considered acceptable.

21. During construction phase, with the implementation of dust control measures including watering for active construction areas, the dust levels at the identified ASRs would comply with the criteria of hourly Total Suspended Particulates (TSP), and daily and annual RSP and PM 2.5.

Other Environmental Impacts

22. Other environmental impacts including water quality, sewerage, fisheries, waste management, land contamination and hazard to life have been addressed in the EIA report. With the implementation of recommended mitigation measures, the Project will comply with relevant requirements under the TM.

ENVIRONMENTAL MONITORING AND AUDIT

23. The EIA report includes an Environmental Monitoring and Audit (EM&A) Manual which recommends an EM&A programme during construction and operational phases of the Project. Key recommended EM&A requirements are site inspection of ardeids roosting and breeding activities before site clearance, noise monitoring during construction, and monitoring of the establishment of woodland compensation areas and the new flamingo pond during operation of the Project.

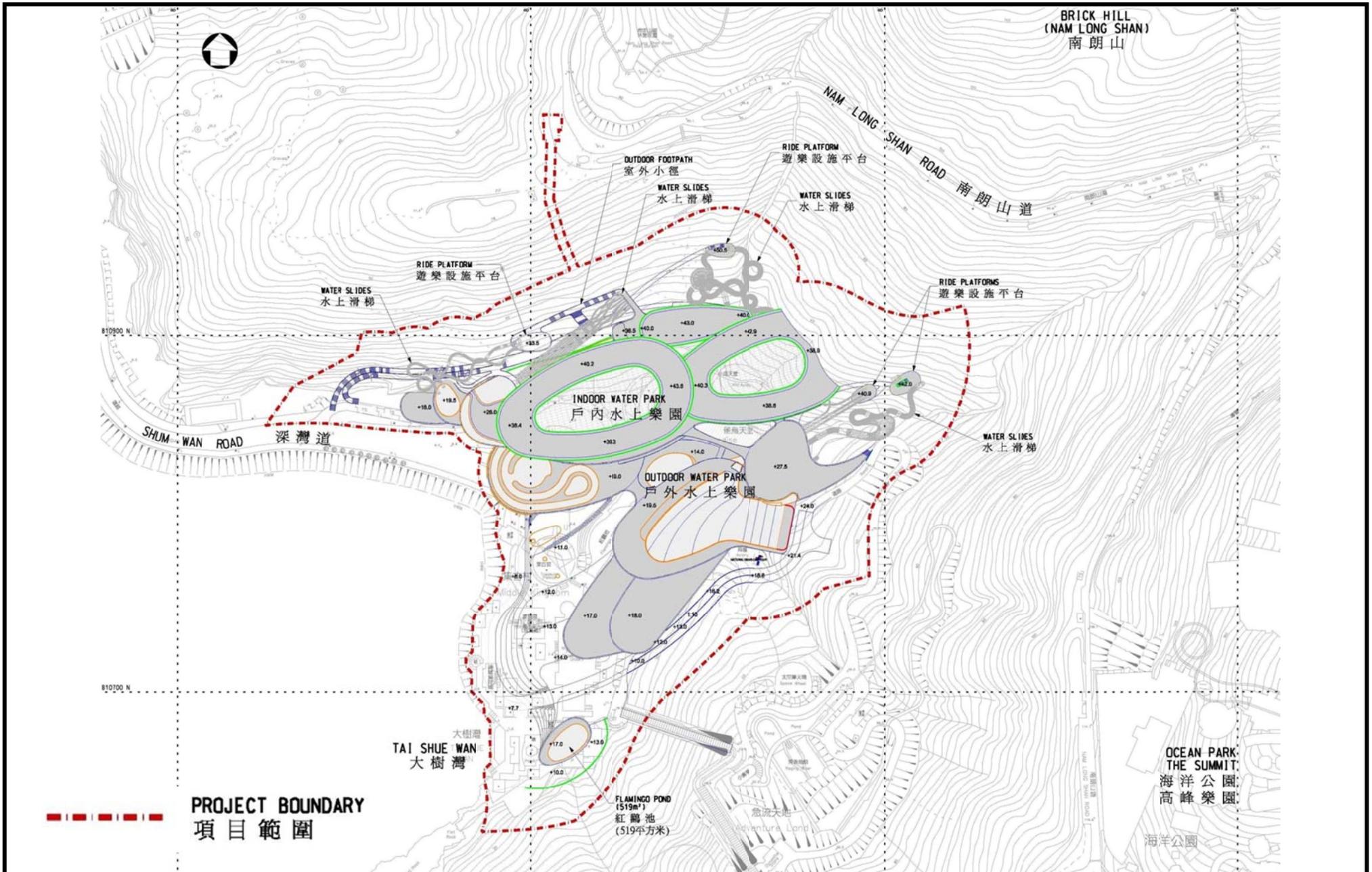
PUBLIC CONSULTATION

24. The Applicant has made the EIA report, EM&A Manual and Executive Summary available for public inspection under the EIAO from 20 May 2014 to 18 June 2014. Members will be informed of any public comments received by DEP in due course.

June 2014

Environmental Assessment Division

Environmental Protection Department



Project Title: Tai Shue Wan Development at Ocean Park

Figure 1 – Location and layout of the Project
(based on Figure 2.5 of the Executive Summary of the EIA Report)

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Figure 2 – Schematic Landscape Plan of the Project
(based on Figure 12.13 of the EIA Report)

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Figure 3 – Artist's Impression of the Project
(based on Figure 2.2 of the EIA Report)

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